March 3, 1950

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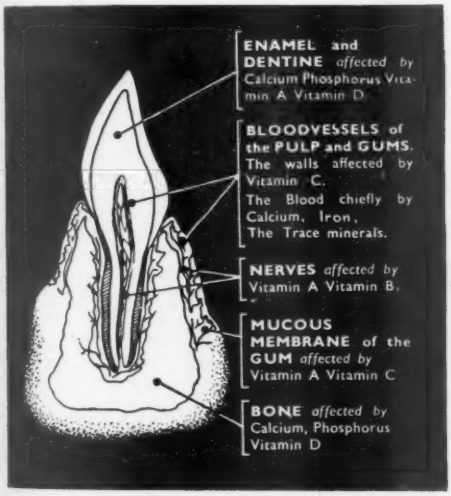
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BRITISH DENTAL JOURNAL

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VOL. LXXXVIII MARCH 3, 1950 No. 5

ORIGINAL COMMUNICATIONS

DENS IN DENTE

By GÖSTA GUSTAFSON and STIG SUNDBERG

(*Continued from p.* 88)

CASE HISTORIES

Case 1

Clinical Findings.—Our first case was observed in the Dental Clinic of the Central Hospital in Västerås. An 11-year-old girl was sent to the Dental Clinic on March 17, 1947, because of pain over the right front teeth in the upper jaw. She was taken ill in the middle of February 1946 with nasal catarrh, cough and a high temperature. She recovered after a week but fell ill again in January 1947; her temperature was 39° C. After a short recovery she fell ill for the third time on February 24, the symptoms being high temperature, a sore throat and pain in the ears. On the 26th of the same month Bright's disease was diagnosed. Her B.S.R. was 56 mm./hour. On March 18 the B.S.R. rose to 98 mm./hour. Before visiting the Dental Clinic on March 17 the patient had had pain over the apex of the maxillary second incisor for some days. A radiograph revealed a peculiar form of the second maxillary incisor and also rarefaction of the bone around the apex of this tooth. The patient said that on December 6, 1946, she received a blow in the face and that later on there was a swelling of the cheek and that the tooth ached for some time. As the patient at that time was very ill the tooth was not inspected by a dentist and was not extracted until March 18. After the extraction the pain disappeared.

Microscopical Examination.—The buccal side of the crown is normal in appearance whereas on the lingual side (fig. 3) the foramen cæcum is situated near the incisal edge. The whole lingual side of the crown is dilated. The root is very large and has a wide apical foramen within which the tip of an invagination can be seen. Here is a second apical foramen.

The tooth has a large invagination entirely filling the dilated pulp chamber. The invagination, which is lined with enamel, has a communication through the foramen cæcum and, what is more surprising, also a communication through the tip of the invagination to the dental pulp. In that way there was a communication all through the tooth from the outer surface right into the bone.

Fig. 3 (Case 1).—The extracted tooth.

A radiograph (fig. 4) of the extracted tooth, when ground down to a thickness of about 1 mm., gives a clear view of the structures concerned (schematic drawing in fig. 5). There appears to be no distinct boundary between the outer normal enamel and the enamel of the invagination. The invagination is lined with enamel on all sides except at the bottom where an opening leads into the dental pulp through the dilated tip of the invagination, the seat of the second apical foramen.

The pulp chamber is compressed to a mere slit between the invagination and the normal

outer dentine. The invagination is surrounded by the pulp on all sides. Only in the coronal portion of the tooth is there any connection between the enamel and the dentine of the invagination and the normal enamel and dentine. There is no precise boundary between the outer and the inner enamel and between the outer and the inner dentine. The transition is continuous. The upper end of the pulp chamber lies at the normal height in relation to the cervix of the tooth.

FIG. 4 (CASE 1).—Radiograph of tooth ground down to 1 mm. thick.

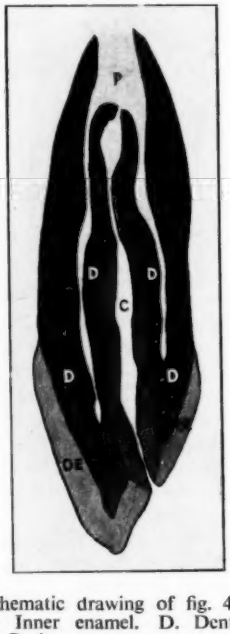

FIG. 5.—Schematic drawing of fig. 4. O.E. Outer enamel. I.E. Inner enamel. D. Dentine. P. Pulp chamber. C. Cavity.

As most investigators (except Bøhn) have paid very little attention to the character of the enamel, it was decided to make a ground section of this tooth in order to investigate it in polarised light. Unfortunately the canal at the tip of the invagination was situated laterally and it was therefore impossible to see this opening in the final section (fig. 6). The tooth was too brittle to risk making photographs in incident light during the grinding. However, the canal was observed, sketched and compared with the radiograph in fig. 4.

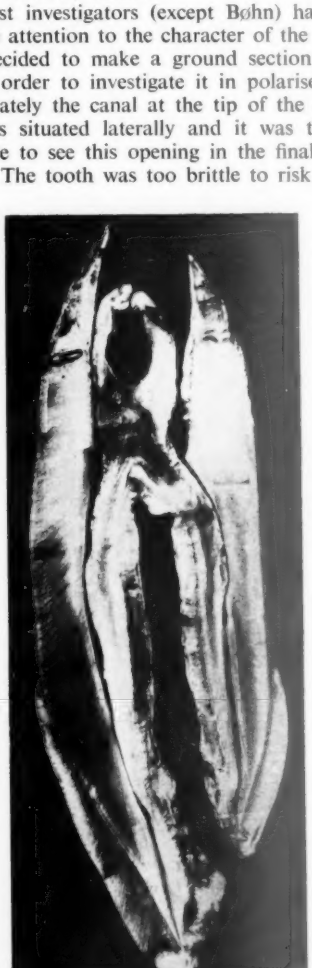

FIG. 6 (CASE 1).—Photograph of final B section.

The Outer Enamel.—The outer enamel has a fully normal appearance, is well mineralised and

shows no defects at all. The lines of Retzius are normal in number and intensity. The thickness of the enamel appears normal. A small number of spindles are seen in the coronal tip. A few hypocalcified areas (seen in polarised light) are situated near the neck of the tooth, but they are of an intensity often found within this area (Gustafson and Kling, 1948).

The Inner Enamel.—The transition from the outer enamel to the enamel of the invagination is continuous and without a sharp boundary (fig. 6). The external opening to the enamel surface was originally very narrow but during the grinding small pieces of the enamel were lost.

The enamel lining the invagination on all sides is apparently of normal thickness and the organic framework seems undisturbed, whereas the mineralisation is very deficient (fig. 7). Hypocalcified

FIG. 7 (CASE 1).—Photomicrograph of inner enamel.

areas occur all over the inner enamel. It must particularly be noticed that the enamel near the external opening of the invagination is as poorly calcified as is the enamel at the bottom of it. On the ground section the internal opening is not to be seen but the radiograph (fig. 4) and observations made during grinding show that there was no difference in calcification between the different parts of the enamel of the invagination.

Investigations in polarised light showed that the disturbances in mineralisation are not everywhere great. Areas with positive birefringence are found only in a few places, whereas areas with pseudo-isotropy are found all over the enamel. The enamel is not entirely lacking in minerals but there is a minor deficiency of minerals.

The Outer Dentine.—The outer dentine shows a normal appearance with normal direction of the dentinal tubules. The mineralisation is fully normal with Ebner-lines of normal intensity. Owen-lines are not to be seen. There is nothing to indicate abnormal pressure during the developmental stage of these parts of the tooth. Only the wide apical foramen differs from the normal, but even here there is no sign of abnormal pressure. The whole root is covered with cementum of normal appearance.

The Inner Dentine.—The dentine of the invagination also seems to be normally mineralised; it may be that the dentine near the crown is a little more mineralised than normal.

The prominent feature of the inner dentine is the rapid changes in the direction of the dentinal tubules (fig. 8). When investigated in polarised

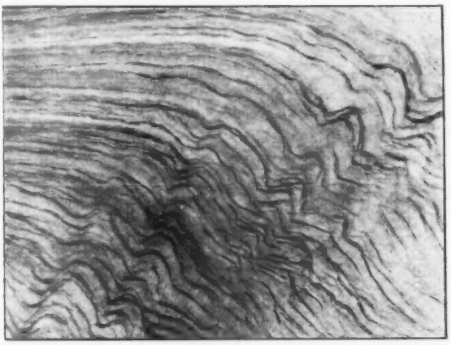

FIG. 8 (CASE 1).—Inner dentine showing bending of dentinal tubules.

light the dentine shows an onion-like structure (fig. 9), described by Bøhn as consisting of different layers. In reality there is no formation of different layers and the onion-like appearance is due to the frequent bendings of the tubules (fig. 8), which take the form of small bendings going up and down with a pronounced inclination towards the tip of the invagination.

It is easy to get the impression that the dentine of the invagination has been subjected to strong upwards pressure during its development and that the internal opening acted as the restraining point. The internal opening with its core of connective tissue would seem to have been held back in its original place whereas the forming dentine round the internal opening appears to have been pressed upwards.

The internal opening is relatively narrow and lined with enamel near the invagination (figs. 4 and 5). The opening leads to a lower ampulla (figs. 4 and 6), which opens into the pulp chamber through a "second apical foramen." The dentinal tubules in this ampulla are not so strongly bent as are those

nearer the crown portion. The "second apical foramen" is partly lined with cementum.

The Pulp Chamber.—The invagination fills the pulp chamber almost entirely and between the invagination and the outer dentine there is only a narrow space left (fig. 5). As said before, the summit of the pulp chamber is at a normal height in relation to the cervix of the tooth. In a few places within the pulp there are blood-vessels with recognisable red blood corpuscles. This indicates that when the tooth was extracted on account of pain, the pulp must have been alive, in spite of the rarefaction of the bone. The wide apical foramen may have allowed apical infection to take place although parts of the pulp were alive. The same observation was made by Bøhn.

FIG. 9 (CASE 1).—Photograph of inner dentine viewed by polarised light. Note onion-like appearance.

Conclusions.—This tooth is characterised by the relatively wide connection between the invagination and the dental pulp. The enamel of the invagination is poorly mineralised but its organic framework shows a relatively normal appearance.

The dentinal tubules of the invagination with their pronounced bendings indicate that there was strong pressure during the development of the tooth. Otherwise the normal appearance of the outer enamel and of the outer dentine shows that these parts of the tooth were not exposed to any abnormal pressure. The wide apical foramen has not been closed around the tip of the invagination.

CASE 2

Clinical Findings.—The second tooth (from Arne Björk), also a second maxillary incisor, was extracted in October 1942 as the result of a diffused rarefaction of the bone around the apex of the tooth (fig. 10). The patient was a boy 11 years old. No trauma and no caries could be found.

Microscopical Examination.—The exterior of this second maxillary incisor shows only minute divergencies from the normal. The tooth has, however, a somewhat conical shape but is of normal size. It has a very wide apical foramen within which the tip of an invagination can be seen. In this tip there is no visible "second apical foramen." The foramen cæcum is situated near the very broad incisal edge.

The radiograph (fig. 10) shows a similar invagination as was found in Case 1, but it is impossible to see any communication between the cavity of the invagination and the dental pulp.

FIG. 10 (CASE 2).

The enamel lining the cavity of the invagination is continuous with the outer enamel. The foramen cæcum leads from the outer surface into the cavity of the invagination. Even the bottom of this cavity is covered with enamel but this is of inferior quality to that of the enamel nearer the external opening. The enamel shows depressions reaching the dentine and running round the cavity horizontally.

The invagination of this tooth is not as great as in Case 1; however, it presents the same characteristics.

To preserve the enamel this tooth was also ground, but, during the grinding operation, the exposed surfaces were photographed in incident light. This

made it possible to record the changes not present in the final thin section.

The Outer Enamel.—The outer enamel (fig. 11)

FIG. 11 (CASE 2).—Photomicrograph showing intense lines of Retzius in incisal enamel and defective enamel of invagination.

shows some intense lines of Retzius incisally situated. The mineralisation appears normal and the enamel contains no hypocalcified areas. No abnormal bendings of the prisms could be found and the thickness of the enamel also is normal.

The Inner Enamel.—As in Case 1 the transition from outer to inner enamel shows no marked step and similarly the external opening (foramen cæcum) is very narrow.

The enamel of the invagination (figs. 11 and 20) is very defective. Contrary to Case 1 even the organic matrix is disturbed; enamel is totally lacking at certain spots, particularly so at the bottom of the cavity. Part of the inner enamel was, however, lost during grinding. The deterioration increased from the external opening to the bottom of the cavity. The depressions previously described show a total lack of enamel. The mineralisation is everywhere deficient and no normal enamel is present. Within the cavity small pearl-like pieces were found, which when examined in polarised light appeared to be enamel.

The mineralisation is at some places so disturbed that there are even areas with positive birefringence. The defective areas are not localised to certain structures or places.

The Outer Dentine.—The mineralisation of the outer dentine is normal and the dentinal tubules (fig. 12) are normal in size and direction. The apical

FIG. 12 (CASE 2).—Photomicrograph showing normal outer dentine—right and left dentine of invagination with channels leading to pulp chamber.

foramen is very broad. There are no signs indicating abnormal pressure during the development of the outer dentine.

The Inner Dentine.—The mineralisation of the dentine of the invagination is apparently normal. The dentinal tubules show abnormal bendings, which, however, are not so pronounced as are the bendings of the tubules in Case 1.

The most characteristic feature of this invagination is the immense number of channels leading from the cavity of the invagination to the dental pulp. All these channels are of about the same size and they always start from places where the enamel is lacking (figs. 12 and 13) and they follow exactly the course of the surrounding dentinal tubules. They are not like channels caused by resorption, and the surrounding dentine is nowhere resorbed. The dentine around the channels shows a strong

positive birefringence indicating a very low degree of mineralisation. The dentine is often very badly damaged round the opening of the channels.

FIG. 13 (CASE 2).—Inner dentine showing channels leading to pulp chamber.

The Dental Pulp.—The degree of invagination in this tooth is not so great as in the former case and the dental pulp in consequence is not so compressed. The pulp is depressed to a narrow slit only in the crown portion. It may be added that the dental pulp was entirely lost during the preparation.

Conclusions.—Even this tooth shows communications between the cavity of the invagination and the dental pulp. But this time there are an indefinite number of small channels instead of the one broad channel in Case 1. The connection between the cavity and the dental pulp must have been very intimate.

Another point to be noted is the very inferior build-up and mineralisation of the enamel of the invagination: the channels between the cavity and the dental pulp chamber being devoid of enamel and consequently also of dentine.

The tip of the invagination shows that this part of the tooth had been subjected to abnormal pressure or pulling during the development of the tooth.

CASE 3

The third tooth, which looked like a round odontoma, was found among other extracted teeth in the Göteborg School Dental Clinic. It was impossible to trace its origin.

Microscopical Examination.—This tooth has a very abnormal appearance being more like an odontoma than a tooth. The external features give no indications as to the build-up of the malformation.

A radiograph showed mineralised tissues surrounding a great cavity. These tissues formed double walls with a narrow space between them. The internal opening (apical foramen) is very broad (about 3 mm.) whereas the external opening (foramen cæcum) is somewhat narrower (about 1 mm.). In the radiograph the mineralised tissues appear to be of the same density as normal dentine. Only small parts show a density resembling that of enamel.

The sketch (fig. 14) is a diagrammatic represen-

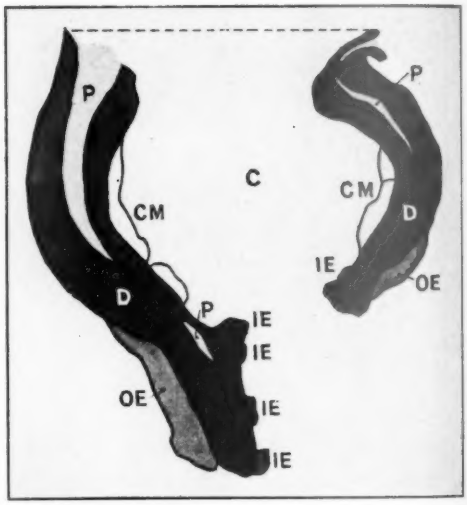

FIG. 14 (CASE 3).—Schematic drawing from radiograph of tooth. O.E. Outer enamel. I.E. Inner enamel. D. Dentine. P. Pulp chamber. CM. Cementum. C. Cavity.

tation of a radiograph taken when the specimen had been ground down to a thickness of about 1½ mm. This shows that there is a certain similarity between this and the former two cases. The foramen cæcum is broader, the invagination deeper, and the dental pulp chamber is more compressed, but the build-up is essentially the same.

The Outer Enamel.—The outer enamel is normally mineralised. The only defective feature is a single bending of the lower portion of the enamel and of the underlying dentine (fig. 15). The bending has, however, not caused any changes in the mineralisation of the enamel. The thickness of the enamel is that of a second maxillary incisor. The enamel is lacking entirely at the incisal edge. It is difficult

to understand why this should be the case but the appearance of the surface indicates the possibility of resorption.

The Inner Enamel.—Only small remnants of the inner enamel are left (figs. 14 and 15). Apparently

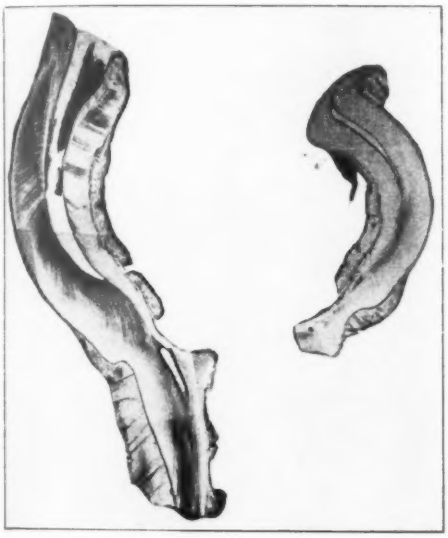

FIG. 15 (CASE 3).—Section showing bending of portion of enamel and dentine and small remnants of inner enamel.

most of the enamel here was never laid down. The small pieces of inner enamel show hypocalcified areas and also changes in the direction of the prisms (fig. 16). These changes are apparently

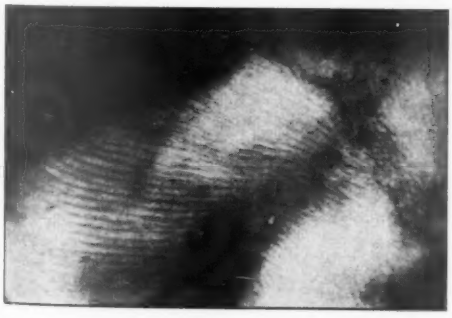

FIG. 16 (CASE 3).—Section of inner enamel.

caused by pressure or traction during the development of the tooth.

The Outer Dentine.—The coronal portion of the outer dentine is normal (fig. 15). As pointed out before there is a single pronounced bending in the crown. The dentinal tubules of the root show small bendings indicating slight pressure or traction during the developmental stage of this part of the tooth.

The Inner Dentine.—As in the other cases the mineralisation of the inner dentine is normal but the bendings of the dentinal tubules (fig. 17) are

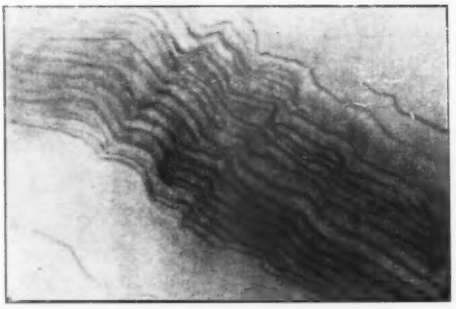

FIG. 17 (CASE 3).—Section showing bending of dentinal tubules of inner dentine.

very pronounced. In polarised light the dentine appears to be built up in different layers but a closer examination discloses that this is caused by the changes in the direction of the tubules.

There are no channels like those seen in Case 2. The wide internal opening represents the communication between the cavity of the invagination and the pulp chamber.

The Pulp Chamber.—As the inner dentine is pressed close to the outer dentine the dental pulp chamber is compressed to a mere slit. The pulp reaches a normal height in relation to the neck of the tooth.

FIG. 18 (CASE 3).—Abnormal cement corpuscles in cementum lining interior of cavity.

The interior of the cavity of the invagination is lined with cementum which is characterised by great areas with cement corpuscles of an abnormal size lying close up to one another (fig. 18). In other areas there are very few such corpuscles.

Conclusions.—Although this specimen differs widely from the other cases there is no doubt that they are all examples of the same malformation. They are all characterised by a deep foramen cæcum, an invagination lined with enamel, a compressed pulp chamber, bendings of the dentinal tubules in the invagination, and last, but not least, by a communication between the cavity of the invagination and the pulp chamber.

Case 4

The fourth tooth (from Åke Ohlsson), a second maxillary right incisor, was extracted when the patient was 11 years old. It was extracted because of pain.

Microscopical Examination.—The radiograph (fig. 19) revealed a very typical dens in dente where

Fig. 19 (Case 4).—Radiograph of tooth.

the second right maxillary incisor should have been. The cavity of the invagination was lined with enamel and presented two dilated areas partially lacking enamel, one in the middle of the invagination and the other at the bottom of it.

The tooth was ground down to a thin section and during the grinding it was examined in incident light.

The invagination shows a number of channels leading from the cavity to the dental pulp chamber and winding in different directions and it is impossible to trace them on one single ground surface. Fig. 20 shows the starting point of such a channel with the enamel totally lacking where the channel begins within the dentine.

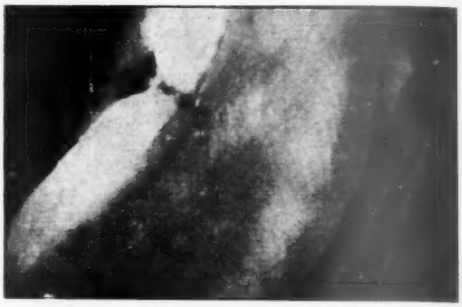

Fig. 20 (Case 4).—Starting point of a channel leading from the invagination to the pulp chamber. Note the absence of enamel at the opening of the channel.

The channels in this case are not as numerous as are the channels in Case 2. As many authors have reported dens in dente showing no channels at all, it was decided to grind this tooth in such a way that no channels should be seen in the final thin section. The result led to the conclusion that the dens in dente, that have been described as being without channels, may have had channels although these were not present in the section examined. It is therefore indispensable that all dens in dente should be examined in incident light during the grinding or that serial sections be prepared when decalcified specimens are used.

The tip of the invagination shows pronounced bendings of the dentinal tubules and these bendings are symmetrically arranged round the middle of the tip (fig. 21). At the very tip of the invagination

Fig. 21 (Case 4).—Bending of dentinal tubules at tip of invagination.

there is a broad channel which could be seen during grinding.

CASE 5

Clinical Findings.—The patient, a 9-year-old girl, showed a 4 centimetre long scar on the chin from the middle of it to the left downwards. Obviously she had received a heavy blow on this place, the direction of which must have been such that the mandible and the teeth may have been damaged. However, the patient does not know when or how this occurred.

The first right lower incisor had a very strange appearance with a furrow round it. The tooth was also bent outwards (buccally) in the middle of the crown where the furrow is situated (fig. 22).

A B C

FIG. 22 (CASE 5).—The lower incisor. A. Buccal aspect. B. Mesial aspect. C. Lingual aspect.

FIG. 23 (CASE 5).—Radiograph of tooth.

On the buccal side there was a deep cavity where the tooth appeared to be carious.

The tooth showed also a pronounced bending to the buccal side. The carious cavity was not very deep and had broken edges.

The root was normal and had only lost a bit of the tip when extracted.

On the buccal side of the mandible there was a fistula with suppuration. The patient had had no trouble from this tooth, no pain and no swelling.

Microscopical Examination.—The photographs of the extracted tooth (fig. 22) show a crown which is deformed at about half-way from the neck to near the incisal edge. The lower part of the tooth is normal and so also is the incisal edge. The area between these two normal parts is compressed round the tooth.

The radiograph (fig. 23) shows an invagination from the buccal side. The pulp chamber is dilated in the buccal-lingual direction.

There is a furrow round the tooth (figs. 24 and

FIG. 24 (CASE 5).—Section of tooth showing furrow round the tooth and channels leading from the surface to the pulp chamber.

24A). From this furrow a foramen cæcum-like opening on the buccal side leads to the inner part of the tooth. The carious spot on the buccal side has no relation to the orifice.

The tooth was examined and photographed during grinding.

The furrow round the tooth (figs. 24 and 24A) contains no enamel and shows, even on the lingual side, channels leading from the surface of the tooth to the pulp chamber (fig. 25). There are, however, no invaginations round these channels except at the buccal side round the opening mentioned before (figs. 24, 24A and 26). The buccal invagination is similar to the invaginations found in Cases 1 and 2. The invagination is lined with enamel (figs. 23, 24 and 26).

FIG. 24A.—Diagrammatic representation of fig. 24.

FIG. 25 (CASE 5).—Channel leading from lingual side of tooth to pulp chamber.

FIG. 26 (CASE 5).—Buccal invagination lined with enamel.

Strangely enough the channels on the lingual side and those on the proximal sides do not give rise to invaginations. Apparently this part of the tooth was covered by enamel and dentine at the time of the trauma. The lower part of the partially formed tooth was fractured but the tendency to form dentine was already present and continued to operate after the accident. At the buccal side the trauma must have been more pronounced owing to the position of the deciduous tooth and in consequence the connective tissues have been retarded at this place. It can be seen from fig. 27 how much of the tooth was formed before and after the accident.

The boundary between the enamel formed before and after the accident is easy to see (fig. 27). The single prisms (fig. 28) are broken off at right angles to their long direction. This indicates that the

sections of the prisms close up to the boundary were mineralised at the time of the accident. Had the prisms not been mineralised the boundary would have taken a different form as unmineralised prisms would have been bent and not broken off.

The line of demarcation between the dentine laid down before the accident and the dentine laid down after it (figs. 27 and 29) shows the dentinal tubules

FIG. 27 (CASE 5).—Boundary between enamel formed before and after accident.

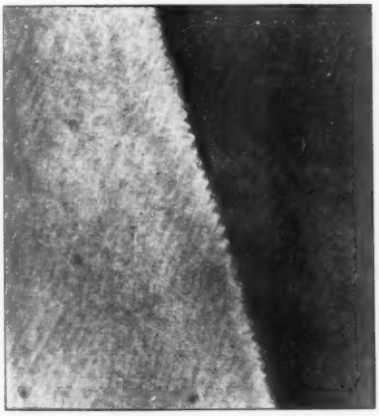

FIG. 28 (CASE 5).—Enamel prisms broken off at right-angles.

bent at a right-angle to their original direction. It is very interesting to observe that after the accident the dentinal tubules started again with the same ramifications as they usually have near the dento-enamel junction (fig. 29). At the tip the dentine (fig. 30) is entirely destroyed.

The invagination at the buccal side starts from an opening in the furrow. The cavity is lined with deficient enamel (fig. 24). At the bottom of the cavity the enamel is lacking in several places and

FIG. 29 (CASE 5).—Post-accident ramifications of dentinal tubules.

FIG. 30 (CASE 5).—Destruction of dentine at tip of tooth.

from these places (figs. 24, 31 and 32) there are channels leading to the pulp chamber. There is one broad channel in the middle and smaller ones round it.

The cavity was filled with a mass that could not be defined (fig. 32). Some pieces looked like enamel but it was not possible to be sure of their consistence.

There is no doubt that this is a dens in dente caused by a trauma. The trauma has destroyed part of the enamel and opened a way to the inner part of the tooth germ. A retardation of this part of the tooth was the result. The invagination was situated at the buccal side owing to the trauma being more severe there than on the lingual side. A trauma can cause retardation only if it destroys all the layers of a tooth germ.

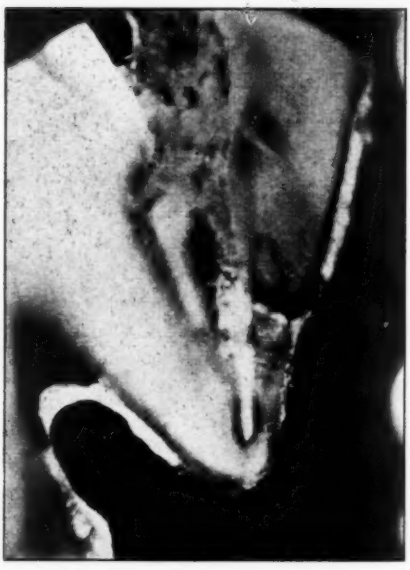

FIG. 31 (CASE 5).—Broad channel leading from bottom of cavity to pulp chamber.

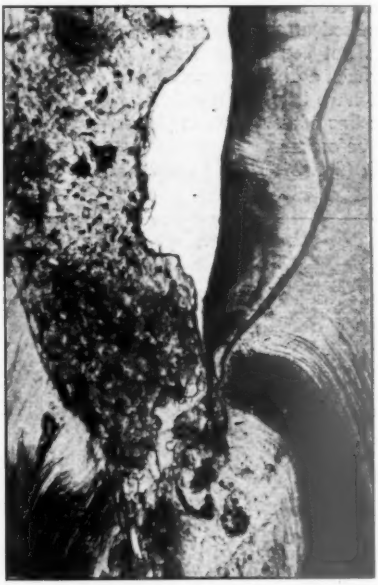

FIG. 32 (CASE 5).—Unidentified material at bottom of cavity. Channels leading to pulp chamber.

CASE 6

The sixth tooth has been described by Bøhn, who gave us the prepared specimen to enable us to describe the soft parts of the channels and of the cavity of the invagination. Unlike our cases the tooth was decalcified and embedded. Thanks to his generosity we were able to investigate a dens in dente with the soft tissues. We thank him for his great kindness.

Microscopical Examination.—The cavity is filled with débris of the enamel organ with the ameloblasts well preserved. In some places, however, the inner enamel epithelium shows a degeneration which is very characteristic. Small rounded parts of the epithelium appear to be calcified and are apparently of the same origin as are the pearl-like remnants found in Case 2.

The contents of the cavity are not necrotic.

The channels show connective tissues with the same characteristics as those in the pulp chamber and may be considered as part of the pulp. Epithelial tissues are nowhere to be found within the channels.

The degeneration of the enamel organ within the cavity bears no resemblance to the degeneration occurring before the eruption of a tooth.

The channels have a great many blood-vessels. It may therefore be possible that in a dens in dente the tissues within the cavity are well nourished as long as they are not infected from without.

CASE 7

The seventh tooth (from O. Boberg) is from a 25-year-old woman, who had a jacket crown over the second maxillary incisor, Before the preparation of the tooth for the jacket crown a radiograph was taken and the malformation found. There had been no pain in the tooth or in the neighbourhood of it. Of course this tooth could not be investigated further. We only mention it here to be able to discuss the treatment of dens in dente.

(To be concluded)

DENTAL AUXILIARY WORKERS[1]

By J. F. PILBEAM, F.D.S. R.C.S.Eng.
Chief Dental Officer, Middlesex County Council

For over thirty years public dental officers had advocated a national dental service and when the National Health Service Act, 1946, made it a duty for the local health authority to provide, in particular, dental care for expectant and nursing mothers and young children, which was termed a priority dental service, they thought that at long last their service was to be established on a sound footing. Events have subsequently proved that instead of a priority service for mothers and children, a priority service for adults under the General Dental Service has taken shape and the local authority dental service is rapidly deteriorating because of the deflection of dental officers to the better-paid General Dental Service. Regional hospital boards are now planning to provide a full-scale dental service in the hospitals. This will create another priority and will further help to denude the already harassed local health authority dental service of more of its officers. Unless the salary problem is solved the position in the future will worsen rather than improve and there seems little hope that the school dental service and the priority dental service could, in their present form, become the spearhead in the attack on dental disease.

Much of the so-called apathy of the public to dental treatment was largely due to the fact that they could not afford to have dental treatment, and now it is available to them it is the responsibility of the profession to find ways and means by which this real demand for treatment may be met. A successful dental service for the nation must be based on the provision of adequate care for the children. The early results of the comprehensive health service have shown that this cannot be achieved by present orthodox methods and consideration must be given to augmenting our forces by the employment of trained dental nurses and hygienists. There is ample evidence that in New Zealand a successful and efficient dental service is being provided for the children by dental nurses. In addition to these two classes of dental auxiliary workers there are dental attendants and dental technicians and all will be considered in the part they can play in a comprehensive dental service.

Dental Man-power

In order that the need of dental auxiliary workers can be placed in its proper perspective, consideration should be given to the number of dentists available to give a comprehensive dental service to the population of 45 million. There are approximately 15,000 dentists included on the Register of whom not more than 12,000 are actively engaged for some part of their time in private practice or in the service of local authorities. It is probable that at the present time not more than 10,000 dentists are taking part in the General Dental Service. The majority of dentists admitted to the Register under the special provisions of the 1921 Act are now in the age-groups above 50 years with the result that the total number of names on the Register is heavily weighted in the higher age-groups. Losses through retirement will therefore be high during the coming years. The average entry rate to the Register is about 340 which is not sufficient to maintain the Register at its present strength. If the number entering the profession annually were to rise to 400 up to 1952 and 425 thereafter, it would still be about thirty years before the effective total of the profession would be increased. This is an alarming forecast. The disturbing fact of this survey is that there are not enough dentists to meet the needs of more than half the population.

Minor Dental Work

The performance of minor dental work in public dental service by unregistered persons is not a new problem. The Departmental Committee appointed by the Lord President of the Privy Council in 1917 and the Inter-Departmental Committee on Dentistry (Teviot Committee) appointed in 1943 considered the matter at some length. The old School Dentists' Society debated this subject on many occasions in the early 1920s.

The Departmental Committee in 1917 seemed to have had little doubt as to the need for auxiliary workers. They were of the opinion that suitably trained and competent dental dressers or nurses acting under the effective supervision of a dentist might be usefully and safely employed in certain parts of the dental work involved and they recommended that the Board of Education should approve of the employment of such dental dressers, the nature of the work they should perform and the arrangements for their supervision by a registered dentist. The Committee also recommended that dental dressers should be employed in the future public dental service whose establishment they contemplated for the treatment of the teeth of adults. The Committee were obviously concerned that the proposed new Dentists Act might cause hardship to the indigent

[1] Read before a meeting of the Western Division, Public Dental Officers' Group, of the British Dental Association, December 3, 1949.

and they visualised the need for the setting up of a public dental service for adults. Extended facilities for dental treatment for poor people were, however, given under the appropriate Public Health Act and the Welfare Act, 1918, and no provision was made by Parliament in the Act of 1921 for the establishment of a public dental service for the treatment of the teeth of adults such as was contemplated by the Committee of 1917–19.

The Committee of 1917–19 found as a fact that—

> "Local Education Authorities object to pay for the provision of dentists, even if available, for the performance of the more routine work." They were of the opinion that the Education Act, 1918 (which had made it obligatory upon local education authorities to provide for the dental inspection and treatment of children in attendance at public elementary schools), must remain, for many years, practically a dead letter, so far as dental treatment is concerned, unless there is a great increase in dentists, or unless dental dressers are permitted to undertake minor work under the supervision of dentists."

The Interdepartmental Committee on Dentistry (1943) under the Chairmanship of Lord Teviot were more circumspect. During the sittings of the Teviot Committee the Butler Education Act, 1944, was passed and they were aware of its provisions so far as the School Dental Service was concerned. They knew that local education authorities would have to provide a full service provided the personnel was available, but most of the evidence before them regarding the lack of dentists was that there appeared to be no shortage to meet the actual demand. They recommended that the institution of any scheme of dental operative assistants should await proof of a shortage of dentists to work a comprehensive dental service. Within three months of the appointed day of the National Health Service Act it became apparent that there was a serious shortage of dentists.

In 1922 the Board of Education issued Circular 1279 to local education authorities which set out the conditions approved by the Minister of Health under Section 1 (3) (c) of the Dentists Act, 1921, for the performance, in connection with the School Medical Service, of minor dental work by a person who is not a registered dentist, under the personal supervision of a registered dentist. A few local education authorities had, under conditions previously approved by the Board of Education, already tried the experiment of employing the services of dental nurses or dental dressers to undertake minor dental work. The Annual Report of the Chief Medical Officer of the Board of Education for the year 1923 stated that persons other than registered dentists who are engaged in school dental work may be classified as (*a*) those who are engaged under the supervision of a dentist, on definitely professional work—inspection, fillings, extractions, etc.—i.e. the "Dental Dressers" as the term was originally understood before the Dentists Act came into force ; (*b*) those who may be employed on "minor dental work" as defined in Circular 1279, with the approval of the Board ; (*c*) ordinary dental attendants employed wherever there is a school dentist, for purely non-professional work, such as the care of the children, preparations of materials, sterilising instruments, etc. Dental dressers as defined in (*a*) were formerly employed in about eight areas, namely, Sheffield (3), Derbyshire (5), Shropshire (4), Liverpool (5), Abertillery (1), Bristol (1), Nottingham (1) and Preston (1) and in some of these areas the special sanction of the Board had been continued for a specified period.

This scheme of dental dressers was ill-conceived and proved a failure. In 1932 the Minister of Health decided that, in future, approval under this Circular should not be given to any proposal involving the performance of inspection or applying or removing dressings and temporary fillings. It was not considered necessary, however, to approve a revised Circular for issue to local authorities informing them of the altered conditions since it was believed, in the light of past experience, that the number of applications for approval to perform minor dental work would be few. This expectation has been realised and since 1922 there has not been a single application. The power, therefore, still remains with local education authorities to employ people such as oral hygienists, for scaling and cleaning, but with regard to the work of school dental nurses, further consideration and approval by the Ministers of Health and Education will have to be given before they can be employed by local health and education authorities. It seems probable, however, that there will have to be an amendment to the Dentists Act before dental nurses could be employed by local authorities.

Dental Nurses

Almost at the same time as the "dental dresser" scheme started in this country, an organised scheme of trained dental nurses commenced in New Zealand. This latter proposal was regarded as a revolutionary one and it gave rise to much controversy within the ranks of the dental profession, a large section of whom feared that a satisfactory school dental service could not be built on such foundations. After nearly thirty years the service has become well established, it has received the blessing of the New Zealand Dental Association and has earned the esteem of the people. From small beginnings it has steadily grown year by year and in 1948 there were 709 nurses in the service including 202 student dental nurses in training. There are now 476 treatment centres serving 233,981 children under regular treatment at six-monthly intervals. Each nurse has

allocated to her between 500 and 600 children. In 1921 the ratio of extractions per 100 fillings was 114·5 and in 1948 6·03 extractions to every 100 fillings. This is a remarkable achievement in just over a generation and certainly emphasises the excellent work the dental nurses are doing. The scope of their work is the same as is normally carried out by dentists engaged in children's dentistry. They have the responsibility of diagnosis, they fill all teeth in the permanent and deciduous dentitions and also undertake local anæsthesia for the extraction of teeth and in the treatment of painful cavities. As an indication of the thoroughness of their work it can be stated that they frequently use the rubber-dam technique in the conservation of teeth. Scaling and cleaning of the teeth together with instruction in oral hygiene also form part of their work. The recent annual report shows that a dental nurse's average output of fillings is in the region of 1,600 per annum, which compares favourably with the average done by the school dental surgeon in this country. In fairness to the school dental nurse it must be stated that she has no dental attendant to assist her as the dental officer has here. The cost of the service is £1 1s. 4d. per child per annum, which is probably a little higher than that in most local education authorities in this country.

The scheme is under the control of the Director of the Dental Division of the Department of Health (himself a dental surgeon) who in turn is responsible to the Minister of Health through the Director. The service is organised in seven units, each of which is controlled by a senior dental officer who is directly responsible to the Director. The fact that the service is centrally controlled ensures some sort of uniformity of policy and this has largely contributed to the success of the scheme.

The average annual salary of a dental nurse, taken over a period of five years, was £340 per annum. The present basis of annual remuneration of a dental officer is, therefore, about three times that paid to a dental nurse, but he can treat approximately three times the number of children she can be expected to deal with—as is shown in the Cambridge reports. If the remuneration paid to dental officers employed by local authorities were comparable to the Spens recommendations, there would probably be few who would leave the service, but those who did leave would not, of course, be lost to dentistry since, as they are fully qualified dentists, they are free to enter any other form of dental practice they so desire. When a dental nurse leaves the service the cost of her training, etc., can be written off as a dead loss since she cannot practise dentistry otherwise than in the school dental service. The time and money spent on her training is therefore wasted when she leaves the service.

The following is a summary of the service given by the dental nurses and is quoted from information supplied by the New Zealand Health Department :

(*a*) *Those Who Have Resigned from the Service.*—From the inception of the scheme in 1921 until March 31, 1949, 591 trained nurses have resigned. The average number of years of service (including two years' training) given by them was 7·88 years.

(*b*) *Those Still in the Service.*—The average total length of service given by 225 dental nurses who at March 31, 1949, have given three or more years of service since qualifying and who are still serving was ten years (including two years' training period). In computing this, school dental nurses with less than five years' service have not been included as the nurses' contract causes them to remain in the department for three years following their training period, which is normally of two years' duration.

Assuming that the remuneration of dental officers is such as to encourage them to stay in the service, and the scope of their work is broadened to give greater variation, they would normally enter at about 25 years of age and continue until 60 years. Their length of service would be thirty-five years. In the New Zealand scheme the number of nurses who would be expected to resign under (*a*) during the thirty-five years would be about 766. The wastage, therefore, is high and represents a direct loss of dental operating power. This is the weakness of the New Zealand Scheme.

In New Zealand the State bears the cost of the full training and maintenance of student nurses and of the instructors in the training schools. In this country the teaching staffs of the dental schools are now the financial responsibility of the State but the majority of students pay their own fees, or the greater part of them. It would therefore appear, from the information given on the somewhat high wastage of personnel in the New Zealand scheme, that it could not be adopted in this country on an economic basis, but let us consider the problem from the point of view of expediency. There are approximately 6,000,000 children in this country attending maintained and non-maintained schools. On the basis of 2,500 per dental officer, a staff of 2,400 officers would be required. This calculation is based on the fact that 72 per cent of children in this country need treatment and that the acceptance rate for treatment would probably be about 84 per cent ; the maximum number of students qualifying from the dental schools each year is about 340, which is not sufficient to make good the wastage from the Register. It is difficult to see how the student capacity could be much increased beyond the present number, at least for some years, in view of the apparent reluctance of young men and women to take up dentistry as a career, existing building difficulties, the lack of teachers in dental subjects, and the shortage of teachers in the basic sciences and

in medical subjects. There is a general expansion in all the professions, and universities cannot meet this increased demand for specialist teachers. In the circumstances it is improbable that the annual output of newly qualified dentists will be materially increased for many years to come. Associated with these difficulties is the fact that many dentists do not like treating children and cannot be attracted to the ranks of the school dental service, however good the conditions of service may be.

Some of the arguments put forward against the employment of school dental nurses are :

(*a*) That they might cause a redundancy of dentists because so many young women would wish to be trained as dental nurses.

(*b*) That parents would not like their children to be treated by operators who were not fully trained.

(*c*) That their work should be supervised and therefore a number of dentists would be engaged in supervisory work, which, in itself, would be a wastage of dental man-power.

With regard to (*a*), it is interesting to point out that although dental nurses have been employed in New Zealand for twenty-eight years, there is still a shortage of dentists in the Dominion, and recently a number of dental officers had to be recruited from this country to fill the gaps in the ranks of the qualified staff required for the organisation of the school dental nurses scheme.

The student dental nurses are carefully selected and it is apparently difficult to obtain an adequate number of the right type. A similar problem would exist in this country were dental nurses employed. There is, in the home country, much competition to obtain suitable women for the nursing profession and for the auxiliary medical services and it is extremely difficult to get sufficient suitable young women to fill all the vacancies in the various fields of medical auxiliary practice. The school dental service in England and Wales would require a staff of over 6,000 nurses to provide a service based on one dental nurse to 1,000[1] children, and I venture to suggest that it would be extremely hard to find and train such a large number of young women even over a period of many years. The chief opposition in the end would probably not come from the dental profession but from other authorities responsible for the training of nurses and auxiliary medical workers because the dental profession would be reducing the available pool of young women suitable for other professional training and employment. Accordingly, the fear of dilution by a large number of women rushing to enter the school dental nurses scheme can be ruled out as the law of supply and demand would have a restraining effect on the number who could be trained.

[1] As the incidence of dental disease in the United Kingdom is not so high as in New Zealand where there is one dental nurse to 500 children, a more appropriate allocation of 1,000 children per dental nurse would be desirable in this country.

With regard to (*b*) almost all parents of school children in New Zealand accept treatment—which indicates they value the work of the school dental nurses and appreciate their efficiency. Many independent observers who have examined treated children are full of praise for the high standard of work done by the school dental nurses. The parents have therefore no qualms about their children being treated by what may be called sub-dentists.

Finally, the contention in (*c*) is not in accordance with the facts, because the dental nurses work as independent units with no more than the normal supervisory inspection which should exist in any scheme.

Training of Dental Nurses

The Department of Health, Wellington, has issued an interesting booklet on the training of the school dental nurse. Applicants must be over 17 years of age and they should have reached a standard of education not lower than the School Certificate. Training is free and student nurses receive a salary of £160 per annum. The course covers two years. The first year is spent in explaining the aims and objects of the New Zealand School Dental Service, the history of dentistry, ethics of nursing, child welfare, hand work, hygiene, dental anatomy, anatomy, physiology, general pathology, dental pathology and dental surgery, dental pharmacology, use and care of dental instruments and equipment, preliminary operative dental surgery, local anæsthesia, extractions, the keeping of clinic records and a brief outline of orthodontics. The second year is devoted mainly to operative dentistry, organisation and administration and dental health education. Students are also required to obtain a certificate in first aid. The subjects outlined constitute a course which demands intensive study but is essentially practical. A good deal of evening work is necessary throughout the two years' training. In addition to class examinations, qualifying examinations are held at the end of each six months. The final examination (written, oral and practical) is taken at the end of the second year. It is clear from the intensive training they receive that they are eminently suitable for the work they perform and are able to make a definite and valuable contribution towards raising the level of health of the children.

Oral Hygienists

The Inter-Departmental Committee on Dentistry (1943) in considering how an adequate and satisfactory dental service for the population might be provided, recommended, *inter alia*, that :

(1) A scheme for the training of dental hygienists should be initiated forthwith on such a scale as would provide an adequate test of their value.

(2) The function of dental hygienists should be limited to the scaling, cleaning and polishing of teeth and instruction to patients in the technique of oral hygiene.

(3) Her work should be conducted throughout under the responsible direction of the dentist, i.e. (*a*) he should examine the patient before the work is carried out by the hygienist ; (*b*) he should give directions as to the treatment to be carried out ; (*c*) he should see the patient after this has been completed; and (*d*) he should be readily available at all times.

As stated elsewhere, the work of oral hygienists is strictly limited in scope in the school dental service. Nevertheless, there are many children in the last two age-groups who need scaling and cleaning, and they certainly need instruction in oral hygiene. In those areas where there are orthodontists most of the children undergoing orthodontic treatment need frequent scaling and cleaning and instruction in the care of the teeth. The "dental nurses" referred to in the Board of Education's Circular 1279 would, if any had been appointed after 1932, have been what is here termed "oral hygienists."

In the service provided by local health authorities under Section 22 of the National Health Service Act their help would be invaluable. From dental examinations of women attending ante-natal and post-natal clinics in Middlesex, it was shown that 93 per cent of those inspected require treatment and all of them need scaling. If oral hygienists were available they could help the dental officers considerably by undertaking the time-consuming work of scaling and cleaning before the latter commenced their operative treatment. It is the ideal preliminary to any surgical measure that the field should be thoroughly cleaned before the operation is commenced. This is particularly so in surgery, and I suggest that it is equally important in dental surgery.

As the oral hygienists can render much useful service of this kind, I find it difficult to understand why there can be any opposition to their employment in the local health authority dental service. It is my view that the results of the Ministry of Health experiment, at present being conducted at the Eastman Dental Clinic and in certain local health authority services, which will be known possibly in two to three years' time, will dispel any doubts as to their usefulness and ability to undertake fully the work for which they are trained. I envisage that, before many years have passed, oral hygienists will become established auxiliary workers in the dental profession. From my brief experience of their work I have formed a high opinion of the efficient manner in which they carry out their work.

Oral hygienists were trained in the Women's Auxiliary Air Force during the war and were employed at 26 Royal Air Force Establishments to carry out treatment comprising the scaling and cleaning and polishing of the teeth, and instruction in the technique of oral hygiene for Royal Air Force patients. In the United States of America oral hygienists are employed in both the public dental service and private practice.

Dental Attendants

In the early days of public dental service it was customary for dental officers to have the assistance of school nurses and health visitors but these were superseded, on the recommendation of the Board of Education, by dental attendants. A capable dental attendant can render valuable assistance and the better she is trained the more useful she becomes in anticipating the needs of the dentist. It is unfortunate that only three dental teaching schools have instituted a course of training for dental attendants, because they are all so eager to learn more about their work and would welcome adequate training facilities which would obviously improve their status and indispensability. The efficient chairside assistant may become the dentist's "third hand" and so enable him to increase considerably his output of work without additional strain.

Dental Technicians

The dental technician is an important auxiliary in any form of dental service and sufficient recognition of his value is essential to encourage more to enter the craft. Adequate training is particularly essential for technicians, and it is gratifying to note that there are now 15 local education authorities who have arranged organised evening classes for them. The City and Guilds of London Institute have organised a schedule of instruction in a wide range of subjects and grant a certificate to technicians who successfully pass their test. The present recognised apprenticeship is five years, and it is a matter for earnest consideration as to whether this is not too long a period of training, particularly in view of the apparent shortage of technicians. If whole-time day courses could be arranged at technical institutes through local education authorities, it would probably be more desirable to have a training period of, say, three years, so that many more technicians could be trained in a shorter time and be, perhaps, better trained and educated.

Registration of Dental Auxiliary Workers

Trained medical auxiliary workers are registered. This has given them status and official recognition of their work. The dental profession may soon have at least four classes of auxiliary workers and the question of organising their registration on the lines of the medical auxiliary workers is a matter which the profession will, at some time, have to consider.

Conclusion

The profession today is fully aware of the parlous state of the local authority dental services. I have now come to the conclusion that it will be extremely difficult to continue the service along existing lines and we must face the fact that if there is to be a continuation of the local authority dental service for children, as I believe there should be, then we must consider the employment of school dental nurses, to eke out our slender resources, as a solution to the staffing problems. I fully admit that I have previously resisted any suggestion of the employment in the school dental service of dental auxiliary workers, but in view of the present difficult circumstances, and after studying the considerable amount of literature from the New Zealand Health Department, and from my personal talks last year with Colonel Llewellyn Saunders, I am convinced that in recommending the employment of school dental nurses we should enhance the value and importance of our service without producing any harmful effect upon the dental profession.

A full scheme of school dental nurses and oral hygienists could not be operated for several years because of restrictions on building and the problems of selection and training. As the proposed employment of dental nurses would be a new departure, I feel it would be an advantage to have a pilot scheme in, say, two local authority areas if the Ministry of Education could inveigle the New Zealand Health Department to second about 25 dental nurses to come to this country. The experiment should prove most helpful for it would give all concerned an opportunity to judge the merits or otherwise of the school dental nurses' work under conditions which exist here.

Many school dental officers would have some misgivings regarding their position if dental nurses and oral hygienists were employed. In my opinion the dental officers' sphere would become more important because many of them would be engaged in the more complicated dental treatments, and there would be opportunities for them to take extensive refresher courses and specialise, say, in orthodontics, prosthetics and radiology. Moreover, the scheme for expectant and nursing mothers must be fully developed and this work will always be their province. Under Section 28 of the National Health Service Act it may be possible, subject to the approval of the Minister, to provide schemes of dental treatment for adolescents, for tuberculous patients discharged from sanatoria and attending local health authority chest clinics, for children at occupation centres, for the adult mentally subnormal and for the chronic sick.

If the dental profession finally accepts the principle of the school dental nurses and oral hygienists there must be adequate safeguards that their employment will in no wise mean a substitution for an equal number of dental officers on the approved establishment of each local health authority area. Their employment must be regarded as additional to the existing establishment as in each area this is far below normal requirements. The profession should also make it a condition of acceptance of the scheme that it should be centrally controlled, in the interests not only of the profession but also of the nurses.

SHORT COMMUNICATIONS

METHOD OF PRODUCING ENLARGED MODELS OF TEETH FOR TEACHING PURPOSES

By A. O. CHICK, L.D.S.Eng.
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Enlarged models of the crowns of teeth are frequently required for demonstrations.

Hitherto, their production has been a laborious task necessitating carving by hand. Because of this, it was felt that a more simple method was needed. Such a method is now described below. It is somewhat lengthy but has an advantage in that most of the time used is "waiting time" rather than "working time" while, in addition, it is simple enough to be entrusted to an unskilled worker, who can produce a large number of different models at the same time.

Method

The tooth to be modelled is selected and an impression of its crown taken in Zelex. Into this Zelex impression, after a light oiling, is poured some blue inlay wax. When this has set, it is removed, invested in plaster of Paris and boiled out when the plaster has set. The cavity is now filled with liquid latex,[1] which is allowed to solidify at room temperature. During this solidification, the latex will shrink considerably and some topping up may be required.

When the latex has set it can easily be removed from the mould. It should now be placed in a glass vessel on some form of stand that will hold it above the level of the chloroform, with which the vessel is partly filled. Exposure to chloroform vapour for some hours will result in the latex model increasing in volume by approximately 75 per cent, the time necessary depending upon the size of the model being treated. When this has occurred, the model should be quickly invested in plaster in a similar manner to that of the first (wax) model. After some time it will have shrunk, when it can be removed from the

[1] Type 5 "Vuljex." Unfilled and uncoloured. Messrs. Wm. Symington and Son, Ltd., 35, Gracechurch Street, London, E.C.3.

plaster mould and the process repeated by filling this with more liquid latex.

Variations of this method may be used to reproduce enlarged models of complete teeth and of many other objects.

Some slight distortion and loss of detail will result from the repetition of the process a considerable number

Tooth to be modelled, original mould and a series of rubber models to show enlargement.

of times, or attempts to over-increase the enlargement of one stage by over-prolonged exposure to chloroform. This factor is, however, too small to be of importance from a demonstration point of view and is only mentioned in case it is thought that the method might be a means of producing strictly proportional enlargement.

Thanks are due to Mr. I. Robinson, Assistant Mechanics Instructor in the Prosthetic Department of the University of Bristol, for help in carrying out the experiments in connection with the work and to Mr. F. Godman of the Department of Medical Photography, University of Bristol, for producing the photographs for this and a preceding article.

BILATERAL CYSTS ASSOCIATED WITH UNERUPTED THIRD MOLARS IN THE MANDIBLE

By MARGARET HOOD, L.D.S.U.Lpool

The patient, a male aged 21, presented himself for examination complaining of pain and swelling at the left angle of the mandible.

A clinical examination led to the tentative diagnosis of an unerupted wisdom tooth with apical infection.

A radiographic examination revealed, in an antero-posterior view of the skull, that both left and right third molars were present, unerupted, and both exhibiting cystic changes around and distal to the posterior roots of each tooth.

Under endotracheal anæsthesia and parenteral penicillin the two third molars were removed, and it was discovered that two fairly large cavities were present in the bone. These were curetted and the sockets left open.

The patient made an uneventful and satisfactory recovery.

Antero-posterior radiograph showing bilateral cysts.

DOUBLE HARE LIP AND CLEFT PALATE

By E. K. TRATMAN, *O.B.E.*, M.D.S., F.D.S. R.C.S.Eng., F.S.A.

Case No. 3205/48. *Malay*, male, aged 36.

Double harelip and cleft palate is not a very rare condition, and the warrant for presenting this case lies in the unusual features that it presents. The condition in this case is congenital, as usual, but the lip gap was exceptionally wide with the median portion of the lip reduced to a small piece of tissue, so small that the teeth were fully exposed labially and showed an advanced stage of parodontal disease.

On the left side, the cleft was continued as an open cleft through the alveolus to the level of the nasopalatine foramen. On the right side the line of the cleft was marked by grooves labially and palatally, though there was some bony union under the mucous membrane. Posteriorly from the nasopalatine foramen the hard palate showed no cleft as far back as the level of the first permanent molars. In this respect the case illustrates the developmental independence of the palatal processes of the maxilla.

In the anterior region on the left side there was a normal central incisor of the permanent dentition and a supernumerary central incisor identical with it, both on the medial side of the cleft and a dwarfed conical lateral incisor on the distal side of the cleft. This incisor showed a pit towards the incisal edge and its form was apparently derived from a compression form, accompanied by an accentuation of the lingual lateral ridges and the cingulum. Both the lateral and the canine showed a marked forward inclination. On the left side the cleft was continued up through the floor of the nose and was complete through the alveolus to the naso-palatine foramen, though the gap was concealed by the soft tissues, which were not, however, united across the gap.

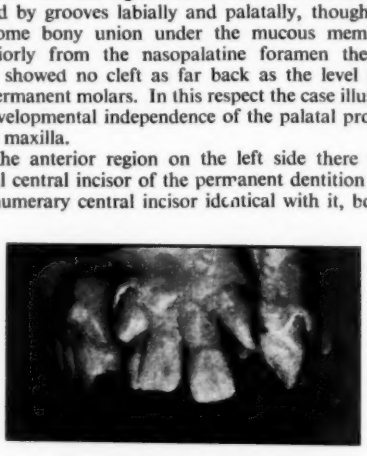

Fig. 1.

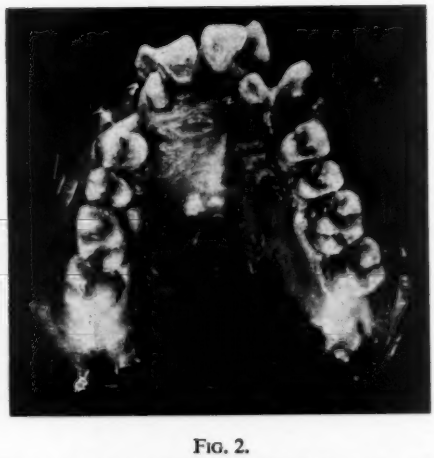

Fig. 2.

Figs. 1 and 2.—Anterior and palatal views of acrylic model of case. (⅔ actual size.)

Fig. 3.—Occlusal X-ray view of case. There is some degree of bony union on the right side. (Actual size.)

On the right side the reduced conical lateral was on the medial side of the grooves marking the cleft and not on the distal. It is particularly to be noted that the permanent canine had also erupted medially to the cleft, a decidedly exceptional condition. The theory has been advanced that the permanent lateral incisor always develops in the premaxilla, and that, if it is found on the distal side of a cleft, then the situation is to be regarded as one in which the lateral is suppressed or missing, and the tooth present distal to the cleft is a pre-canine or supernumerary. This case strongly suggests that this theory is untenable. The obvious similarity of the dwarfed laterals on either side, clearly indicates that the lateral can erupt either medial or distal to the cleft. A not unreasonable suggestion when it is considered how it is possible to get complete transposition of teeth in the premolar-incisor area. It would only require a very small abnormality of position in the tooth bud stage to carry the lateral to one or other side of a cleft—a view that is further supported by the presence of the canine medial to the cleft on the right side in this case. In brief the teeth in cleft palate can behave as partially independent structures in their relationship to the cleft.

BRITISH DENTAL JOURNAL
MARCH 3, 1950

DENTAL SERVICE COMMITTEES

THE assumption by the State, under the National Health Service Acts, of the role of paymaster of the dental profession added an additional factor to the old dentist–patient relationship. In the past a patient who was dissatisfied with the treatment which had been given by a dentist—or with the dentist himself—either grumbled, paid his bill and consulted another dentist, or in extreme cases refused to pay at all. In the latter case the practitioner, left to choose between suing for his fee or writing it off as a bad debt, generally preferred to take the latter course and to accept the loss of his fee as one of the inevitable hazards of practice. The relatively few cases which were brought to court were those in which refusal to pay was based upon charges of professional negligence which the dentist felt bound to contest. The proportion of cases of this kind was small because every wise practitioner took the precaution of being a member of one or other of the defence organisations and these were instrumental in securing the withdrawal of unfounded charges made by unscrupulous patients who attempted in this way to avoid paying the dentist's fees. Dentists in the Health Service are not exposed to this particular risk but, since the expenditure of public money is involved and the State has a right to be protected from paying for work that is not satisfactory, they are subjected to disciplinary checks of another kind. These cover not only cases in which the standard of treatment given is in question but also those in which it is alleged that a practitioner has broken one of the other regulations governing treatment under the Acts. In the first class of case the dentist instead of attempting to settle the case direct with his patient may be called before a dental service committee to answer a complaint. This is, at best, a time consuming procedure, both for the dentist himself and the members of the committee but, since there must be some machinery for dealing with cases of dispute, it is not easy to see in what other way major disputes could be settled. The presence of three members of the profession on the committee ought to ensure that the ultimate decision is a fair one. The real difficulty is to avoid overloading the machine by referring every case of complaint, however trivial it may be, to a service committee. It is probable that under the procedure of the old Dental Benefit Council a large proportion of complaints of this kind were settled directly, either between the dentist and the secretary of the approved society or on the intervention of the secretary of the Council, without the need for a formal hearing. No one would wish unduly to restrict the right of a patient to have his complaint investigated but common sense dictates that the time of service committees should not be wasted on cases which are not supported by adequate evidence. In other words, that chairmen of service committees should make full use of their powers to dispense with oral hearings in suitable cases.

It is, however, the class of case in which major breaches of the regulations are alleged that constitute the major proportion of those heard by service committees. These cover a wide field and if the finding is against the dentist may involve serious consequences—ranging from heavy fines to, in the most extreme cases, a reference to the Tribunal. These wide powers have been entrusted to committees composed of persons many of whom, both professional and lay, have had little or no experience to guide them in the discharge of what is essentially a judicial function. It is, therefore, hardly surprising that there have been irregularities of procedure and wide discrepancies between the penalties inflicted by different committees for similar offences. This latter aspect of the matter is watched by dental advisory committees to the Minister who have power to review the recommendations of Executive Council and to reduce or increase the fines imposed by them. In this way some sort of balance is maintained, and it is reasonable to hope that as the service committees acquire more experience the need for such revision will be correspondingly reduced.

On the broader issues relating to the conduct of cases before service committees, raised in the memorandum recently presented to the Ministry by the Association, it is satisfactory to note that the officials of the Ministry were generally in sympathy with the views put forward and, in particular, that they realised that service

committees needed some official guidance to enable them adequately to discharge their duties and to ensure that justice should be done to the public interest, patients and dentists alike.

On the other side of the picture there are cases in which the dentist has reason to complain of the conduct of a patient. If, for instance, a patient habitually fails to keep appointments and refuses to make payment for any time that the dentist may have lost as a consequence of that failure, the practitioner is left with the doubtful remedy of suing the patient and applying to the Executive Council for permission to withdraw from the case. The patient can always withdraw by simply failing to attend for treatment and a dentist should, if he so desires, be granted a corresponding right. There, too, should be no question about allowing a practitioner to withdraw from a case when he disagrees with the line of treatment which the Dental Estimates Board is prepared to authorise. These are among the elementary rights of a professional man and it is to be hoped that the attention of Executive Councils will be called to them in the handbook which it is understood the Ministry is proposing to issue for the guidance of the councils and their dental service committees.

NOTES AND COMMENTS

Charts and Posters for Dental Health Education

Since 1925 the Dental Board have, through their Dental Health Education Committee, provided the profession with a good deal of material with which to instruct the public in oral hygiene. Before the war they were the only body actively producing such material and considerable sums of money were spent in developing it. On the whole the technical standard of those productions was high and the expert committee of that day were frequently thanked and occasionally congratulated. There was also plenty of healthy criticism, although this was sometimes rather naïve, as when an officer of the R.A.F. asked to assess the teaching value of a particular leaflet, went into detailed adverse criticism and ended, quite convincingly, by asking for 10,000 copies for teaching purposes! A new sub-committee have been at work during the last two years and the result of their labour is now becoming available. There are first some new posters, a useful booklet entitled "Twenty Questions" and a coloured filmstrip on the use of a toothbrush all now ready for general distribution. At no time have the Board produced a more useful and colourful production than their new "Chairside Charts." This is a series of eight charts illustrating the development of the teeth from birth to adult dentition; eruption from $2\frac{1}{2}$ to 6 years and so on. They show some causes of malocclusion; caries and the need for regular expert examination. On opposite pages are diagrams of the eruption of the foundation teeth and their relation to the permanent dentition; diagrams of teeth in section and an unusually clear set of pictures illustrating tooth brushing. The charts are produced on stiff board, glazed, washable and fastened with spiral binding so that they open flat and are readily handled. Intended for the use of teachers and health visitors as well as dentists and nurses the charts are assembled in an attractive form and should serve admirably the educational purpose for which they are intended. Entirely different in object is a set of beautifully drawn pictures designed by Miss Eileen Soper for decorating the walls of classrooms, nurseries etc. The subjects are charming and are produced in ten bright and cheerful colours with a rhyming couplet beneath, e.g. "Clean your teeth the proper way, Up and down and twice a day," to point the moral. The sheets are well gummed and are produced in a manner which is wholly commendable. All this material can be had from the Dental Board. The filmstrip costs 12s. 6d., including a typescript text, the charts 10s. 6d. and the friezes 3s., all inclusive of postage. These prices just cover the cost of production. There is great scope for imaginative, accurate and skilfully produced material of this type, and the sub-committee are to be congratulated in particular on these last two productions.

Hospital Staffs Legal Protection

THE Report of the Hospitals Group to the recent meeting of the Representative Board draws attention, once more, to the position of salaried officers of hospital staffs in relation to possible claims by patients in which negligence is alleged. The fact that a dental surgeon is employed by a hospital authority and is paid a salary does not in any way reduce his liability to be sued in the Courts for damages for alleged negligence in the treatment of patients. A patient may sue both the employing authority and the dentist who carried out the treatment. If he did so, the hospital would in most cases be able successfully to plead that having employed a well-qualified and skilled practitioner they had discharged their obligation to the patient. This defence, however, would not cover the personal responsibility of the practitioner to exercise due care and skill in the treatment which he gave. He

is thus, in this respect, in exactly the same position as a private practitioner, and has a similar need to avail himself of the protection afforded by membership of one of the defence societies against unfounded claims and the ever-present possibility of having heavy damages awarded against him. These considerations apply to all salaried officers, who are exercising a profession no matter by whom they are employed.

Public Dental Service in Norway

UNDER an Act passed by the Norwegian Storting last year systematic dental treatment is to be provided in Norway free of charge for all children and adolescents between the ages of six and eighteen years of age and for the rest of the population at fixed rates, lower than the fees usually charged by private practitioners. The scheme is to be administered by the cities and the twenty counties (fylkene) into which Norway is divided.

The country is to be divided into 385 dental service districts. Each of these districts will have a dental service committee composed of the district dental officer and at least two other members. Each district will have its own clinic or clinics in which treatment will be given, and the Act provides that no other institution shall be entitled to the description Dental Clinic. It is estimated that some 925 dentists, some full time and some part time, will be required to carry out the necessary treatment. The cost of the scheme—like the previous school schemes in Norway—is to be defrayed partly by the State and partly by the local authorities. In the cities 70 per cent of the cost will be borne by the municipalities, whereas counties will only be called upon to pay 40 per cent of the cost. The Act provides that with the consent of the Storting the King may extend the free service to children between the ages of 3 and 6.

Fifty Years Ago

From the "Journal of the British Dental Association," February 15, 1900.

Further, a dentist must be governed by a high sense of honour, and express it in friendly politeness that will secure confidence, reassure timidity, and give the public just grounds to form a favourable opinion of his ability and integrity; he must observe the utmost cleanliness in his person, recollecting that it is the patient's mouth he has to treat; his hands, his instruments, and the utensils employed in the surgery, must in this respect be scrupulously attended to. In the course of his manipulations he must not touch the face further than is requisite to support the part he is about to operate upon; under no circumstances must he make a display of his instruments, nor after one patient has been treated permit another to enter the apartment before all the instruments, cloths, glasses, etc., previously used have been removed; he must take no snuff and eschew tobacco; in short, he must be amiable, agreeable and inoffensive.

Quoted from "Dental Anatomy and Surgery" by James Robinson, published in 1846, by Mr. Charles West in his valedictory address to the Metropolitan Branch.

REVIEWS AND ABSTRACTS

THE BRITISH PHARMACEUTICAL CODEX, 1949. London: The Pharmaceutical Press. Pp. xxv + 1562. Price £3 3s.

Bound in its usual strong dark blue glazed binding, this volume should stand up to constant handling by dispensers. The paper is tough and the print is bold and easily legible. Several committees of distinguished authorities are responsible for the different sections of the publication and they are to be congratulated on the result of their deliberations. The book is very well set out and contains a wealth of easily found information. To the dental surgeon who wishes to familiarise himself with the present possibilities of penicillin therapy, the section on this subject is excellent. The sulphonamide group of drugs is very fully dealt with and the advantage and disadvantage of each member of the group explained. The properties of local anæsthetics are discussed and an intelligent selection of the newer preparations can be made as a result of a study of the information available on these medicaments.

Several prescriptions for mouth washes are included—this is an innovation.

A loose folder is included in the book containing a list of the Codex names of preparations and in the opposite column the proprietary name. In the second half of the folder the proprietary names are given in alphabetical order and in the corresponding column the Codex name. At the present time, when the nomenclature of drugs has become so chaotic, this folder is of very real value.

As a book of reference the 1949 Codex is a welcome addition to our library.

THE 1949 YEAR BOOK OF DENTISTRY. Edited by S. D. Tylman, D.D.S., M.S., D. A. Keys, D.D.S., J. W. Knutson, D.D.S., Dr. P.H., G. R. Moore, D.D.S., M.S., H. B. G. Robinson, D.D.S., C. W. Waldron, M.D., D.D.S. The Year Book Publishers Inc., Chicago. H. K. Lewis & Co., London. Pp. 656, 405 illustrations. Price 37s. 6d. net.

These small compact books are composed of condensed versions of the important papers published in the periodical literature during the previous year. The articles, which are wisely selected and expertly condensed so that none of the value of the original is lost, are arranged under a number of subject headings and are well indexed. Although American literature naturally predominates, a considerable number of articles from British and European sources have been selected. Many of the original illustrations are reproduced, and the value of the present volume is enhanced by a number of critical comments which accompany some of the summaries.

The Year Books of Dentistry are especially useful to the practitioner who, though keen to keep abreast of current knowledge, lacks the time or opportunity to read the large volume of periodical literature published every year.

Dental Lesions in Baboons.—This paper is based upon an examination of the dentitions of 16 members of the baboon colony at the London Zoo who died during the period 1933–37. They had been in captivity from 6 to 12 years and it was estimated from autopsies that all were old animals and some were probably very old, i.e. over 14 years. On account of the restricted space in which they lived and the large number of males in proportion to females the incidence of injuries due to fighting was no doubt unduly high. Attrition, which was probably the basis for many of the pathological findings, was surprisingly variable in degree. This may in part be due to age variation but in one of three specimens which showed little attrition the condition of the sutures indicated an aged animal. In this case there were well-marked arthritic changes in the glenoid fossa, and in the other two swollen gums in the region of the cheek teeth may have diminished the use of the dentition. In all specimens wear of the occlusal surfaces of the incisors had led to exposure of secondary dentine and in extreme cases as much as two-thirds of the crown was worn away. The upper canines tended to be reduced by wear mesially and distally to thin blades by attrition against the lower canines and premolars and are more easily fractured than the lower canines which become worn on the distal aspect only. In many cases the pulps of upper canines were exposed by fractures. The most attrition among the cheek teeth was met with on the first molars which may be worn down to the cervix, the only enamel remaining as a thin marginal rim. Small fractures of this enamel were common, especially interdentally, and played a part in the initiation of caries and of gingival injury. One or both upper first premolars were lost in about half the animals ; this is a small short-rooted tooth and its loss was no doubt due to its proximity to the canines which are used for tearing. Loss of molars was less common and was usually due to carious destruction. There was invariably some recession of gum of the incisor region and the gum margin was often thick and nodular. There was often a deposit of calculus on the exposed surface of the roots. Microscopically there was some degree of infiltration of the subgingival connective tissue with inflammatory cells but, unlike in human pyorrhœa, the subgingival epithelium did not show interpapillary processes. The opinion is held that the gingival condition found in these baboons differs from the common form of human pyorrhœa and it is probable that mechanical injury plays an important part in its ætiology. Gingival changes were most evident in the region of the cheek teeth where not only was the gum receded but pockets had developed. The gum was swollen and there was much calculus, probably due to reduced use. More than three-quarters of the animals showed caries in some degree. Carious lesions were commonest in the upper canines and commenced in the exposed pulp canals and were therefore probably of different origin from caries elsewhere. Caries affecting the cheek teeth probably started interdentally at the sites of fractures of enamel weakened by attrition but in some cases may have been due to the lodgment of food as a result of gum recession. In contrast to the findings of Colyer, in only two cases did caries start in cup-shaped hollows produced by attrition on the occlusal surfaces. No caries was found in the incisors. In some cases caries was very extensive and radiographs showed rarefaction of the apical bone, and in sections abscess cavities, sometimes lined with epithelium, were observed. The caries differed from that in the human in that extension under enamel was less obvious and the carious process seemed to be a slow one. In one case an organism resembling the *Bacillus acidophilus* was isolated from carious dentine. The diet provided for the baboons by the authorities consisted of succulent roots, fruits, nuts and green forage. This may have been supplemented by cooked starchy foods provided by the public. In the wild state the diet would be more varied and would include insects, birds eggs, lizards and worms.—James, W. Warwick, and Barnicot, N. A. (1949) *Proc. Zool. Soc.*, **119**, part 3, 743-753.

Decalcification of Bone and Teeth Under Vacuum.—The delay due to the time required for the decalcification of histological specimens of calcified tissues leads to some inconvenience in laboratories. Waerhaug has found that by carrying out the process under reduced pressure, produced by a water pump if the water pressure is high enough, with a relatively high degree of vacuum, 74 cm. of mercury, the time required is reduced to about one-tenth. During the process of decalcification bubbles of carbon dioxide rise continuously from the specimen and as soon as decalcification is completed the bubbles cease, but an additional twelve to twenty-four hours is recommended as a margin of safety. There is no indication of damage to the tissue or cells through the reduced pressure, in fact it is considered that the quality of the stained sections is improved, probably because the tissue is in contact with acid for a shorter period.—Waerhaug, J. (1949) *J. dent. Res.*, **28**, 525.

Gingival Biopsy: A New Technique for Diagnosis of Generalised Amyloidosis.—Amyloidosis occurs as a complication of a number of diseases but of tuberculosis in particular. Amyloid substance, a protein, is deposited in the tissues ; sometimes it is localised to a few situations but usually is disseminated in all tissues. It can be detected histologically in biopsy specimens and in many cases this is the method by which the diagnosis is established. The gingiva provides a very convenient and safe situation from which to obtain biopsy material. Gingival biopsies were obtained from 50 subjects in whom the diagnosis of amyloidosis was either firmly established or suspected. Methyl violet was found to be the most suitable stain for demonstrating amyloid, although permanent preparations are difficult to obtain. In most cases amyloid was present in the specimens and in several cases this was the means of confirming the clinical diagnosis. However, it was found that failure to find amyloid in a gingival biopsy does not definitely exclude the disease as in four cases where gingival biopsy was negative amyloid was present in other tissues.—Selikoff, I. J., and Herschfus, L. (1949) *J. Amer. dent. Ass.*, **39**, 159.

The Ascorbic Acid Content of the Saliva of Carious and Non-carious Individuals.—The ascorbic acid in saliva collected two hours after breakfast from 31 non-carious persons and 54 persons with caries was estimated colorimetrically. Although the average value of the non-carious was 0·21 mg. per cent and of the carious was 0·17 mg., it is not considered that this difference is statistically significant.—Hess, W. C., and Smith, B. T. (1949) *J. dent. Res.*, **28**, 507.

Bilateral Osteotomy of the Rami of the Mandible.—A man aged 22 years presented very marked inferior retrusion. There was a good deal of caries and parodontal disease but as many teeth as possible were conserved. Orthodontic bands and arch-wires were fixed to upper and lower teeth. An intra-oral incision was made along the anterior border of the vertical ramus, and the periosteum was elevated from both surfaces of the ramus. The mandibular nerve was identified, and the ramus cut through above the mandibular foramen with a Luc motor bone saw. This procedure was repeated on the other side and the mandible was brought forward about ·75 cm. and immobilised by intermaxillary elastics for two months. The incisions healed by first intention and considerable improvement in the patient's appearance was obtained.—PINCOCK, D. F. (1950) *J. oral Surg.*, **8**, 54.

Salivary Citrate and Dental Erosion.—Fluids containing citrate are known to exert a destructive influence on enamel. It was hoped to establish some correlation between dental erosion and the amount of citrate in saliva. After checking the accuracy of the methods of estimating citrate in saliva, samples of saliva were taken from 121 persons, about half of whom exhibited erosion. It was found that the citrate content of saliva varies a great deal and shows a tendency to increase with age. At the same time it was noted that the severity of erosion also increases with age so that it is considered that there may be an association between salivary citrate and erosion and that this is worthy of further investigation.—ZIPKIN, I., and MCCLURE, F. J. (1949) *J. dent. Res.*, **28**, 613.

THE HEALTH SERVICE

NATIONAL HEALTH SERVICE TRIBUNAL

AN Inquiry was held at Nottingham on the Representation of the Nottingham Executive Council in the case of Hall Elliot.

The Respondent admitted that he extracted the teeth of a patient before the required approval of such treatment had been received, and that he received a fee of £4 7s. 6d. from the patient in respect of treatment which he was required to give under his terms of service. He also admitted that he had failed to keep records in respect of this and one other patient, and that the dentures made for the second patient were unsatisfactory.

In respect to a number of other charges including one that the Respondent had extracted the teeth of the first patient when the only treatment necessary was to clean and/or scale them, the Tribunal were not satisfied, on the evidence before them, that the charges had been established.

The Tribunal reported that they were fully aware of the gravity of the admissions made by the Respondent and the deleterious effect of his actions upon the Dental Services of the Executive Council, and were firmly of opinion that the continuation by the Respondent of such conduct would make it obvious that his inclusion in the Dental List of the Executive Council for the County and City of Nottingham would be prejudicial to the efficiency of the General Dental Services. Nevertheless, after deep consideration, they had decided that, at this juncture and on the evidence tendered, they would not be justified in directing that the Respondent's name should be removed from the said Dental List.

The Tribunal made no Order as to costs.

LONDON LOCAL DENTAL COMMITTEE

A DINNER was held for the members of the London Local Dental Committee at The Number Three Club, January 18, Mr. G. M. Hickley, the Chairman of the Committee, presiding. The object of the function was to provide an opportunity for an exchange of views between those engaged in the administration of the general dental services and practitioners.

The guests at the dinner were: Dr. W. G. Senior, *O.B.E.*; Mr. W. L. Boness; Mr. J. Lauer; Mr. A. S. Marre, Ministry of Health; Mr. H. Parker Buchanan; Col. F. S. Whiter; Mr. P. Paige Green; Mr. H. Lesser, *C.B.E.*, Chairman, London Executive Council; Mr. C. H. Lyon; Mr. L. J. Godden; and Mr. J. C. Gilbert, *O.B.E.*

After dinner the Honorary Secretary of the Committee, Mr. H. C. Ardouin, made a "Statement of Case" in which he outlined points of difficulty experienced by practitioners. He drew particular attention to the rigid control of the dentist under the Regulations and criticised the complete freedom of the patient from control.

It had been asserted that the dentist could be held to have accepted a patient verbally or through an agent before even examining the applicant for treatment. This point of view was wholly unacceptable to the profession and he maintained that acceptance could only be established by the proper completion of an E.C.17 by dentist and patient.

Once acceptance was established the dentist could only withdraw from the case with the consent of the Executive Council, and could be committed to carry out treatment with which he did not agree or for a remuneration less than he considered adequate.

There was no control over patients who could break appointments or generally misbehave with impunity.

Treatment could be held to be unsatisfactory for many reasons and it was sometimes difficult to understand what standard was required. When a breach of Regulations was found to have been committed, penalties appeared to vary considerably as between different Executive Councils and to be unduly harsh in some.

There was much dissatisfaction in relation to the Dental Estimates Board, many delays occurring with regard to authorisation of treatment, especially in cases where more than one estimate had been sent from different dentists, and it appeared that many patients whose treatment required prior authorisation and whose work precluded any settled address could not obtain complete treatment at all, and further, fees allowed for special treatment were very often unsatisfactory to the practitioner.

In replying to the Toast of "The Guests" Dr. Senior said he very much appreciated the opportunity which had been afforded to his colleagues and himself of meeting practitioners for an exchange of views, a step calculated to lead to the solution of difficulties. The

National Health Service Acts had come to stay, although experience might show the need for some modifications. He congratulated Mr. Ardouin on the way in which he had stated the "Case" and assured the company that the Department were most anxious to help practitioners in their difficulties and that he and his colleagues were ready at all times to give advice over the telephone on points arising in day-to-day practice. Any suggestions the Committee might make to the Department would always receive the most careful consideration. There must at times be occasions when there was unsatisfactory work and the Minister had to deal with those cases in accordance with the Regulations. His own definition of a satisfactory standard would be that any dentist could look at the work and say "this job has been well done."

In his remarks with regard to the acceptance of a patient Mr. Ardouin stressed the fact that the Dental Estimate Form contained a portion which had to be completed by the dentist and handed to the patient in token of acceptance, and he submitted—this view having been endorsed by the British Dental Association—that the acceptance was not complete until Part 6 of the Form had been handed to the patient.

In his reply Mr. Marre dealt with this point. He said that the view of the Ministry was that the acceptance of a patient could be indicated by a dentist, or by his agent, by other means than the use of the Dental Estimate Form and by word of mouth. He said that in the London area alone, there had been no fewer than 633,000 dental estimates submitted, and the London Dental Service Committee had had to consider only 54 cases, such figures emphasised the excellence of the service. With regard to the point whether a dentist was entitled to withdraw from a case if he were not satisfied with a decision, Mr. Marre said that a dentist could so withdraw only with the consent of the Local Executive Council concerned.

Mr. Lesser said that as a lawyer, he would venture the opinion that Part 6 of the Dental Estimate Form was only confirmatory evidence of a contract which had previously been made by a dentist with regard to his willingness to undertake the treatment of a patient.

Mr. Boness gave some details of the work of the Dental Estimates Board. He said that the Board received over 30,000 new estimates daily in addition to the return of those previously authorised. He outlined the early difficulties of the Board and said that mistakes had inevitably been made—but the initial difficulties were gradually being surmounted. He stressed particularly that much delay could be avoided if dentists took care to see that the correct cypher was written on the outside of the envelope and that their observations regarding their cases were legible. He gave an assurance that the Board would do all in their power to help the profession and to give sympathetic consideration to its problems.

Mr. C. W. F. Thomas thanked the guests for their attendance and the information they had given. He expressed the hope that the function would result in a good understanding between practitioners and those responsible for the administration of the Service.

The proceedings terminated with a vote of thanks to the Chairman proposed by Mr. Seymour Robinson.

DENTAL NEWS

DENTAL GROUP DINNER

THE Council of the Association have accepted an invitation from the Central Committee of Dental Groups to be the Guests of Honour at a Group Dinner to be held at the Mayfair Hotel, London, on April 21, 1950, coinciding with the April meeting of the Representative Board.

At this Dinner the Group Movement will be wound up and the funds of the Central Committee handed over to the Benevolent Fund of the Association.

Tickets for admission to this Dinner (restricted to members of Dental Groups) may be obtained from the Hon. General Secretary, Central Committee of Dental Groups, 56, Hendon Lane, London, N.3. Applications should be accompanied by a remittance of £1 12s. 6d. for each ticket.

FÉDÉRATION DENTAIRE INTERNATIONALE (F.D.I.)

THE Fédération Dentaire Internationale, the only organisation devoting itself exclusively to the international problems of dentistry, celebrates its fiftieth anniversary this year.

Despite the disruptions caused by the world wars, linguistic and national barriers and meagre funds, the Fédération Dentaire Internationale has adhered steadfastly to its original objectives of raising the educational level of the profession and establishing closer relationships between dentistry and dentists throughout the world. This it has done by holding annual meetings, by promoting an International Dental Congress every five years, by encouraging activities of national dental associations that contribute to dental science and by compiling and preserving reports of such advances in its archives.

Plans have now been completed for a new International Dental Journal, the first edition of which will be published in September of this year, a fitting memorial to the mid-century anniversary of the Federation.

So well has the Fédération Dentaire Internationale succeeded in carrying out its objectives and in establishing itself as a scientific body that it has been selected as the agency to represent the dental profession in the World Health Organisation.

The annual meeting this year will take place in Paris, July 23 to July 31, at the "École de Médecine." The local Organising Committee have arranged the meeting at the same time as the "Journées Dentaires de Paris," so that visitors will be able to attend both meetings. There will be : The meetings of the F.D.I. (Bureau - Commissions - Executive and Scientific), the Scientific Meetings of the "Journées Dentaires" and an extensive social programme, including Official Reception, Banquet and Dance, Theatre and Ballet, Excursions, etc. . . .

The arrangements for travel, accommodation and

tickets for social events have been placed in the hands of the " American Express Company," 6 Haymarket, London, S.W.1, and intending visitors are advised to communicate with them direct as soon as possible.

The continued success of the F.D.I. depends not only on a world-wide membership of affiliated national dental societies, but upon an active, interested and informed individual membership which includes amongst its privileges a reduced cost of the new International Dental Journal, and a reduced subscription to the XIth International Dental Congress, London – July, 1952.

Information regarding individual membership, the subscription for which is £1.0.0. per annum, can be obtained from G. H. Leatherman, 35 Devonshire Place, London, W.1.

DENTAL BOARD OF THE UNITED KINGDOM

Discipline Cases

WITH one exception, in which the Board found that the facts alleged against the practitioner had not been proved, the discipline cases before the Dental Board at the November session related to convictions for various offences. Mr. E. I. Morgan was found to have been convicted of driving a motor car whilst under the influence of drink and of dangerous driving. The Board decided that he should be summoned to appear before them again in November 1950 and be required to satisfy them that he had discontinued the disreputable practices which had led to his conviction.

In the three other cases in which Mr. R. W. Thackwray, Mr. J. H. Maginn and Mr. H. E. F. Eagle had been convicted respectively of bigamy ; being concerned as a director in the failure of a limited company to deliver 1,128½ clothing coupons to the Board of Trade ; being drunk and disorderly and assaulting a policeman, the Board discharged the cases with warnings.

BONUS FOR LANCASHIRE P.D.O.s

THE Lancashire Education Committee agreed, on February 20, to pay a bonus of £200 per annum to all school dentists in the employ of the committee. It was reported that 13 clinics were already closed and no less than 40,000 school children were without dental supervision.

DENTAL CANDIDATES FOR PARLIAMENT

ONLY one of the two dentists who were candidates at the General Election was successful. Mr. J. Baird was elected for Wolverhampton, North East, by a majority of 14,643, but Mr. J. Chalmers failed in his attempt to win South Shields. Other results of interest to the profession were the return of Dr. Charles Hill for Luton and that of Mr. Hugh Linstead for Putney.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

THE course of Lectures in General, Oral and Dental Surgery which was to have been held at the Royal College of Surgeons of England from February 20 to March 17, 1950, has been cancelled owing to insufficient students enrolling their names for the course.

THE SECOND MID-ATLANTIC STATES SEMINAR IN ORAL MEDICINE

THE Postgraduate Courses of the School of Dentistry of the University of Pennsylvania is offering the Second Mid-Atlantic States Seminar in Oral Medicine at Skytop Club in Pennsylvania's famous Pocono Mountains, on November 5 to 10, 1950, the week immediately following the 1950 convention of the American Dental Association in Atlantic City. The general theme of the seminar deals with the biology of bone and growth and development as it affects, or is affected by the teeth and jaws, the anatomy and pathology of the periodontal tissues and diseases of the blood of interest to the general practitioner.

The clinicians taking part include Dr. Wilton Marion Krogman on Growth and Development, Dr. Joseph P. Weinmann on the Biology of Bone and Bones, Dr. Carl V. Moore on Diseases of the Blood of Interest to the Dentist, Dr. Edward J. Ryan on Psychosomatic Aspects of Dentistry, Dr. John R. Thompson on the Temporomandibular Joint, Dr. Balint Orban on Periodontal Disease, and Dr. Lester W. Burket on Oral Medicine and Dr. J. L. T. Appleton.

The fee for the seminar, including registration, lodging and meals for the five days is $225.00.

Further information can be obtained on application to Dr. Lester W. Burket, Director, Postgraduate Courses, School of Dentistry, University of Pennsylvania, 4001 Spruce Street, Philadelphia, 4, Pennsylvania.

PROSTHETIC DEMONSTRATIONS

THE London Regional Branch of the Dental Laboratories Section of the Surgical Instruments Manufacturers' Association is holding an evening meeting of Table Demonstrations at the Bonnington Hotel, W.C.1, on Monday, April 17, 1950, at 7 p.m.

The demonstrations are being given by members of the Branch and will include ones on Stainless Steel, Mouth Rehabilitation, Copper Formed Models, Bridgework, Specialised Orthodontic appliances, Maxillo-Facial appliances and Ceramics.

Admission tickets are obtainable by members of the profession on sending stamped addressed envelope to Mr. C. M. Booth, 26, Palmerston Road, Wood Green, N.22.

REDUCTION IN PRICE OF PENICILLIN G

The Distillers Company (Biochemicals) Ltd., of Speke, Liverpool, announce that, as from February 27, 1950, the price of Crystalline Penicillin G has been reduced to that of Amorphous (Coloured) Penicillin:

The new prices for single vials are 100,000 i.u. 1s. 3d., 200,000 i.u. 1s. 10½d., 500,000 i.u. 3s. 6d., 1,000,000 i.u. 6s. 6d.

THE LIGHTER SIDE

FROM the *Swansea Evening Post* :—

" Dentures, lower, *male*, lost Jan. 7 ; reward.—137, Llangyfelach St."

From a patient's letter :—

" I beg to enquire whether you extract dentures under the National Health Scheme . . . I visited you about four years ago for extractions with the exception of six dentures."

The Schools

PROPOSED NEW SCHOOL AT ABERDEEN

THE proposal that a dental school should be established in Aberdeen University has been carried a stage further by the appointment of four representatives of the Aberdeenshire and Kincardineshire National Health Service Council to discuss with the University and the Regional Hospitals Board the steps to be taken to place the matter before the Department of Health for Scotland.

NEW DENTAL HOSPITAL FOR SHEFFIELD

THE Board of Governors of the United Sheffield Hospital have approved the expenditure of £50,000 for the building of the first part of a new dental hospital. The new building will be in Wellesley Road, off Glossop Road, and it is hoped that part of the building will be completed before March 31, 1951.

The Services

THE ROYAL NAVY

SURG. Lieut.-Cdr. (D) Athelstan C. Fuller, Sussex Division, R.N.V.R., has been awarded the Volunteer Reserve Decoration by His Majesty The King.

THE TWO FIFTY CLUB

(Non-Regular Ex-Officers Royal Army Dental Corps)

THE Fourth Annual Dinner of The Two Fifty Club (Non-Regular Ex-Officers Royal Army Dental Corps) was held at The Victory (Ex-Services) Club, London, W.2, on Saturday, January 28, 1950. One hundred and twenty were present, many having travelled long distances. Brigadier R. A. Broderick, *D.S.O.*, *M.C.*, T.D., was the only guest and was elected President of The Two Fifty Club. In proposing the toast of The Two Fifty Club, Brigadier Broderick said that the Club had provided a means of bringing together again dental officers who had served in many fields during the recent war and that he hoped that the good comradeship formed in those days would be kept alive. He wished success to the formation of branches of The Two Fifty Club throughout the country.

Will those wishing to attend the 1951 dinner please communicate with the Secretary, Major J. W. Cooper, 130, Holland Road, London, W.14, now in order that adequate arrangements may be made.

Appointment

East Anglian Regional Hospital Board.—Mr. A. C. Deverell, F.D.S. R.C.S.Eng., at present Director of the Eastman Dental Clinic, London, has been appointed Consultant Dental Surgeon in the Ipswich Area.

Obituary

HUGH STIRRAT HUNTER, L.D.S.St.And.

WE regret to record that after a long illness, bravely borne, Hugh S. Hunter died in Arbroath on February 15. By his passing, the profession in Scotland loses a respected member and an outstanding personality.

Born in Glasgow fifty-six years ago, Hunter received his early education in that City and in Ardrossan before going to reside in Arbroath. After serving his apprenticeship with Messrs. Campbell, South Tay Street, Dundee, he commenced his studies at University College there, but these were interrupted at the outbreak of war in 1914.

As an officer in the Black Watch, Hunter saw active service in France and never completely recovered from the disabilities for which he was invalided out early in 1917. Resuming his studies in Dundee, he became the first student of the newly established Dental School to obtain the Licence granted by the University of St. Andrews. After qualifying in 1918, he acted for a time as assistant to the late Gordon Shiach of Elgin before commencing practice in his adopted town.

Hugh Hunter's popularity in the profession and out of it was easily understandable for he combined with a bright and breezy manner an honesty of purpose and a great kindliness toward his fellow men. Throughout his career he took an active interest in the Association, serving well the North of Scotland Branch as member of Council, Branch Representative and President in turn.

He was a founder member and President of his Rotary Club ; a prominent member of the local Dramatic Club ; equally active in the training of sea cadets and the keenest of anglers. He loved living and infected all with whom he came in contact with his ardent enthusiasm.

Birth

HOLMES.—On February 15, at Greenbanks, Holbeach Hurn, Lincs, to Joan, wife of Maurice H. Holmes, L.D.S. R.C.S., a brother for Jonathan (Charles Templeman).

Our Diary

Wednesday, March 8.

Bromley, Beckenham and District Section.—Inaugural meeting, Eden Park Hotel, West Wickham, 8.30 p.m. Election of Officers and Committee.

Oxford Section.—Radcliffe Committee Room, Oxford, 7.45 p.m. "Recent Advances in Operative Dental Surgery," Allan Thompson.

West Lancashire, West Cheshire and North Wales Branch.—Exchange Hotel, Liverpool, 7 p.m. "Brains Trust on Problems of the National Health Scheme."

Thursday, March 9.

Brighton and District Section.—Conjoint Meeting with Brighton Division, B.M.A., Bedford Hotel, Brighton, 8 p.m.

The University College Hospital Dental Society.—U.C.H. Medical School, University Street, London, W.C.1, 7.30 p.m. "Our Attributes," R. E. Rix.

Saturday, March 11.

Eastern Counties Branch.—13, Hill Street, Berkeley Square, London, W.1, 10.30 a.m., Business Meeting ; 11 a.m., "The Future of the School and of the Priority Services," J. F. Pilbeam ; 2.15 p.m., "The Reduction of After Pain in Minor Oral Surgery," Allan Thompson.

Public Dental Officers' Group.—Eastman Dental Clinic, Gray's Inn Road, London, W.C.1. 10.30 a.m. : Clinical Meeting ; 2.30 p.m. : "Current Affairs," G. L. C. Elliston.

Monday, March 13.

The British Society of Periodontology.—Royal Dental Hospital, Leicester Square, London, W.C.2, 5 p.m. "Post-graduate Teaching of Periodontia," W. G. Cross.

The British Society for the Study of Orthodontics.—Manson House, 26, Portland Place, London, W.1, 7.30 p.m. "A Survey of Antero-Posterior Abnormalities of the Jaws in Children Between the Ages of Two and Five and a Half Years of Age," Professor H. F. Humphreys and B. C. Leighton. Short Communication D. F. Glass.

Tuesday, March 14.

Bristol and District Section.—Dental Hospital, Bristol, 7.30 p.m. "The Influence of Recent Research upon Orthodontic Diagnosis and Treatment," J. H. Hovell.

Croydon and District Section.—The Y.W.C.A., Lansdown Road, Croydon, 8.15 p.m. "Dentistry for Children," Miss A. F. Stewart.

Wednesday, March 15.

West of Scotland.—Royal Faculty of Physicians and Surgeons, 242, St. Vincent Street, Glasgow, C.2, 8.15 p.m. "Future of the British Dental Association," J. W. Gilbert.

The Continental Dental Society.—Eastman Dental Clinic, Gray's Inn Road, London, W.C.1, 8 p.m. "Prosthetics in General Practice," J. Ellinger.

Thursday, March 16.

Central Counties Branch.—Clinical Meeting, Royal Salop Infirmary, Shrewsbury, 7.30 p.m., preceded by Informal Dinner, Raven Hotel, 6.15 p.m.

Metropolitan Branch.—13, Hill Street, Berkeley Square, London, W.1, 7.30 p.m. "Crime and the Dentist," Dr. C. Keith Simpson.

Friday, March 17.

Metropolitan Branch—South-Eastern Section.—Woolwich War Memorial Hospital, Shooters Hill, S.E.18, 8 p.m., preceded by coffee, 7.30 p.m. "Partial Dentures," K. P. Liddelow.

Friday and Saturday, March 17 *and* 18.

Southern Counties Branch.—13, Hill Street, Berkeley Square, London, W.1. Friday : Council. Saturday : 10.30 a.m., General Meeting ; "Current Dental Affairs," H. Parker Buchanan, 2.15 p.m., "The Maintenance of Standards in the Practice of Conservative Dentistry," Gerald H. Leatherman.

Saturday, March 18.

Scottish Committee.—Station Hotel, Perth, 2 p.m.

Tuesday, March 21.

Worthing Section.—Annual Meeting, Worthing Squash Club, George V Avenue, Worthing. "Casual Communications."

Wednesday, March 22.

Wessex Branch.—Polygon Hotel, Southampton, 8.15 p.m., preceded by informal Dinner, 7.15 p.m. "Pitfalls in Skiagraphic Interpretation," L. J. Godden.

Thursday, March 23.

Guildford and District Section.—Cotteridge Hotel, Woking. Films, 3 p.m. ; Annual Meeting, 5 p.m. ; Annual Dinner, 7.30 for 7.45 p.m.